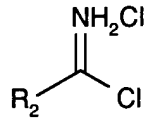
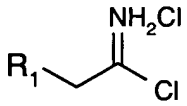
AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A method of synthesizing 4,6-dichloropyrimidine, 5-substituted-4,6-dichloropyrimidines, 4-chloro-6-hydroxypyrimidine, or 5-substituted-4-chloro-6-hydroxypyrimidines, said method comprising reacting a first imidoyl chloride compound represented by the formula:



wherein R_2 is hydrogen, C_{1-4} alkoxycarbonyl, C_{1-4} alkoxysulfinyl, trimethylsilyl or a group –C(OH)R′R″ wherein R′ and R″ are independently hydrogen, C_{1-4} alkyl or phenyl ~~or a substituent which can be converted to hydrogen~~, and a second imidoyl chloride compound which has two alpha hydrogens represented by the formula:



wherein R_1 is selected from hydrogen and a C_1-C_{12} hydrocarbyl group, with phosgene, diphosgene, triphosgene or oxalyl chloride ~~or a compound that can substitute for phosgene~~.

Claim 2. (Original) The method of claim 1, wherein R_1 is hydrogen.

Claim 3. (Original) The method of claim 1, wherein R_1 is a C_1-C_3 alkyl group.

Claim 4. (Original) The method of claim 1, wherein R_1 is methyl.

Claim 5. (Original) The method of claim 1, wherein R_2 is hydrogen.

Claim 6. (Cancelled) The method of claim 1, wherein R_2 is C_{1-4} alkoxycarbonyl, C_{1-4} alkoxysulfinyl, trimethylsilyl or a group –C(OH)R′R″ wherein R′ and R″ are independently hydrogen, C_{1-4} alkyl or phenyl.

Claim 7. (Original) The method of claim 1, wherein R_2 is ethoxycarbonyl.

Claim 8. (Original) The method of claim 1, wherein the first and second imidoyl chloride compounds are reacted with phosgene.

Claim 9. (Cancelled) The method of claim 1, wherein the first and second imidoyl chloride compounds are reacted with diphosgene, triphosgene or oxalyl chloride.

Claim 10. (Currently Amended) The method of claim 1, further comprising synthesizing said first imidoyl chloride compound and said second imidoyl chloride compound, provided that one of the imidoyl compounds has 2 alpha hydrogens, by reaction of:

a) at least one organic amide of structure R-$CONH_2$ with phosgene, diphosgene, triphosgene or oxalyl chloride ~~or a compound that can substitute for phosgene~~, or

b) at least one organic nitrile of structure R-CN with hydrogen chloride, or

c) both at least one organic amide of structure R-$CONH_2$ with phosgene, diphosgene, triphosgene or oxalyl chloride ~~or a compound that can substitute for phosgene~~ and at least one organic nitrile of structure R-CN with hydrogen chloride; wherein each R group is, independently, hydrogen or a group which can be converted to hydrogen or a C_1 - C_{12} hydrocarbyl group.

Claim 11. (Original) The method of claim 10, wherein said group R is a substituted or unsubstituted, linear or branched alkyl group.

Claim 12. (Original) The method of claim 10, wherein one organic nitrile is butyronitrile.

Claim13. (Original) The method of claim 10, wherein one organic nitrile is acetonitrile.

Claim 14. (Cancelled) The method of claim 10, wherein said first imidoyl chloride compound is synthesized by reacting formamide with phosgene, and said second imidoyl chloride compound is synthesized by reacting acetamide with phosgene.

Claim 15. (Cancelled) The method of claim 10, wherein said first imidoyl chloride compound is synthesized by reacting hydrogen cyanide with hydrogen chloride, and said second imidoyl chloride compound is synthesized by reacting acetonitrile with hydrogen chloride.

Claim 16. (Cancelled) The method of claim 10, wherein said first imidoyl chloride compound is synthesized by reacting formamide with phosgene, and said second imidoyl chloride compound is synthesized by reacting acetonitrile with hydrogen chloride.

Claim 17. (Cancelled) The method of claim 10, wherein said first imidoyl chloride compound is synthesized by reacting formamide with phosgene, and said second imidoyl chloride compound is synthesized by reacting butyronitrile with hydrogen chloride.

Claim 18. (Original) The method of claim 10, wherein the process is carried out in an inert organic solvent.

Claim 19. (Original) The method of claim 10, wherein the process is carried out in an excess of nitrile.

Claim 20. (Original) The method of claim 10, wherein the process is carried out in an excess of phosgene.

Claim 21. (Original) The method of claim 10, wherein the process is carried out in an excess of amide.

Claim 22. (Original) The method of claim 10, wherein the process is carried out in stages with the formation of imidoyl chlorides, either separately or as a mixture, being done and then a mixture of the imidoyl chlorides is treated with phosgene to generate the products.

Claim 23. (Original) The method of claim 10, wherein the process is carried out in one stage with the formation of imidoyl chlorides being done concurrently with treatment by phosgene to generate the products.

Claim 24. (Original) The method of claim 10, wherein the process is carried out with continuous feed of raw materials into a reactor system and outflow and recovery of product.

Claim 25. (Original) The method of claim 10, wherein the process is carried out in batches with discreet steps for charging raw materials and recovery of product.

Claim 26. (Original) The method of claim 10, wherein the process is carried out at 0°C to 300°C.

Claim 27. (Original) The method of claim 10, wherein the process is carried out at 60°C to 160°C.

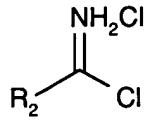
Claim 28. (Original) The method of claim 10, wherein the process is carried out at 80°C to 130°C.

Claim 29. (Original) The method of claim 10, wherein the process is carried out at pressures of 0 to 800 psig.

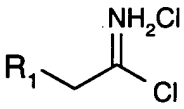
Claim 30. (Original) The method of claim 10, wherein the process is carried out at pressures of 100 to 300 psig.

Claim 31. (Original) The method of claim 10, wherein the process is carried out at pressures of 150 to 250 psig.

Claim 32. (Currently Amended) A method of synthesizing 4,6-dichloropyrimidine, 5-substituted-4,6-dichloropyrimidines, 4-chloro-6-hydroxypyrimidine, or 5-substituted-4-chloro-6-hydroxypyrimidines, said method comprising reacting a first imidoyl chloride compound represented by the formula:



wherein R_2 is –C(OH)R′R″ wherein R′ and R″ are independently hydrogen, C_{1-4} alkyl or phenyl ~~a substituent which can be converted to hydrogen~~, and a second imidoyl chloride compound which has two alpha hydrogens represented by the formula:



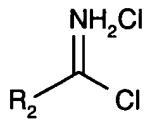
wherein R_1 is selected from hydrogen and a C_1-C_{12} hydrocarbyl group, with phosgene, diphosgene, triphosgene or oxalyl chloride ~~or a compound that can substitute for phosgene~~.

Claim 33. (Original) The method of claim 32, wherein R_2 is C_{1-4} alkoxycarbonyl, C_{1-4} alkoxysulfinyl, trimethylsilyl or a group –C(OH)R′R″ wherein R′ and R″ are independently hydrogen, C_{1-4} alkyl or phenyl.

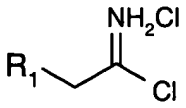
Claim 34. (Original) The method of claim 32, wherein R_2 is C_{1-4} alkoxycarbonyl or C_{1-4} alkoxysulfinyl.

Claim 35. (Original)The method of claim 32, wherein R_2 is ethoxycarbonyl.

Claim 36. (Currently Amended) A method of synthesizing 4,6-dichloropyrimidine, 5-substituted-4,6-dichloropyrimidines, 4-chloro-6-hydroxypyrimidine, or 5-substituted-4-chloro-6-hydroxypyrimidines, said method comprising reacting a first imidoyl chloride compound represented by the formula:



wherein R_2 is hydrogen, –C(OH)R′R″ wherein R′ and R″ are independently hydrogen, C_{1-4} alkyl or phenyl ~~or a substituent which can be converted to hydrogen~~, and a second imidoyl chloride compound which has two alpha hydrogens represented by the formula:



wherein R_1 is selected from hydrogen and a C_1-C_{12} hydrocarbyl group, with diphosgene, triphosgene or oxalyl chloride ~~a compound that can substitute for phosgene~~.

Claim 37. (Original) The method of claim 36, wherein the first and second imidoyl chloride compounds are reacted with oxalyl chloride.

Claim 38. (Original) The method of claim 36, wherein the first and second imidoyl chloride compounds are reacted with diphosgene or triphosgene.